

FLOSS UK
UnConference

Perl for Systems Administrators

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Straw poll time!

Who's using Perl?

What do systems administrators want?

- Stability
- Security
- Scalability
- Maintainability
- Managed release and upgrade cycles

What do systems administrators want?

- Stability
- Security
- Scalability
- Maintainability
- Managed release and upgrade cycles
- An unlimited supply of coffee

What do systems administrators **NOT** want?

- The latest and greatest shiny toys
- Calls in the middle of the night for outages
- Unpredictable upgrade consequences

What do systems administrators **NOT** want?

- The latest and greatest shiny toys
- Calls in the middle of the night for outages
- Unpredictable upgrade consequences

- To leave the office late when beer is calling

What do developers want?

- The latest and greatest shiny toys
- Rapid upgrades
- Frequent deployments

- A pony!

Oh dear.

Unstoppable enthusiasm meets
immovable sysadmin....

I feel hilarity may not ensue.

There is a new hope.....

Let's talk compromise

But in a good way!
Both sides of the “divide” can win.

Let's talk compromise

But in a good way!
Both sides of the “divide” can win.

There's still not going to be a pony though....

Modules and code reuse

- Comprehensive Perl Archive Network (CPAN)
 - Library of reusable modules
 - 22k modules
 - Automated testing and error reporting
 - One of the best things about Perl!

Perl modules from CPAN

- Sysadmin
 - Distribution packages
 - Easy to maintain and keep in sync

- Developer
 - Latest from CPAN
 - Newest and shiniest features

Module installation

- Distribution packages
 - System wide
- local::lib
 - Per-user installation
- App::FatPacker
 - As part of the module

Multiple versions of the same modules?!

- Fast CGI rather than mod_\$x
 - Isolation between applications and languages
 - Removes issues with shared libraries
 - PHP vs Perl MySQL libraries for example
- Stops one app trashing all apps on a host
 - Assuming web applications here..

Developer says:

“But the distro Perl is hugely out of date!”

Developer says:

“But the distro Perl is hugely out of date!”

“And where's my pony?!”

Multiple versions of Perl

- App::perlbrew

```
perlbrew init
```

- Install versions of Perl!

```
perlbrew install 5.14.0
```

```
perlbrew install perl-5.8.1
```

- Switch Perl version

```
perlbrew switch perl-5.8.1
```

Perl for Systems Administrators

- We've talked about
 - Supporting developers using your systems
- So let's talk about scripting on your systems

Working with files

- `File::Spec`
 - Platform independent paths
- `IO::All`
 - Read a file into a data structure to work with it
- `glob` (since Perl 5.6.0 uses `File::glob`)
 - File pattern globbing similar to the shell

Windows now has
Strawberry Perl!

CLI parsing with Getopt::Long

```
use Getopt::Long;

my $data    = "file.dat";
my $length = 24;
my $verbose;

my $result = GetOptions (
    "length=i" => \$length,    # numeric
    "file=s"   => \$data,     # string
    "verbose"  => \$verbose,   # flag
);
```

DBIx::Class

- Object relational mapper (ORM)
- Hides some of the complexity of databases
- Enables a good chunk of Do What I Mean
- Makes the simple easy
- Gets out of the way for more complex things

DBIx::Class::Schema::Loader

- Magically generate your DBIx::Class schema from an existing database

```
perl -MDBIx::Class::Schema::Loader=make_schema_at,dump_to_dir:./lib \  
    -e 'make_schema_at("My::Schema", { },  
    [ "dbi:Pg:dbname=iantest;host=127.0.0.1","testuser", "testpass" ]  
)'
```

- I've used this technique with MySQL, PostgreSQL and even MSSQL with a great deal of success
- Time saving win!

Database diagrams

- Producing ER diagrams from a database:
- Or MySQL in this instance....

```
mysqldump -d -h $host -u $user \  
    --password="$pass" $db > schema.sql  
sqlt-diagram -d -f --db=MySQL schema.sql -o test.png
```

action_recorder
id int [FK]
module varchar(255)
user_id int
user_name varchar(255)
identifier varchar(255)
success char(1)
date_added datetime

categories_description
categories_id int [FK]
language_id int [FK]
categories_name varchar(32)

customers
customers_id int [FK]
customers_gender char(1)
customers_firstname varchar(255)
customers_lastname varchar(255)
customers_dob datetime
customers_email_address varchar(255)
customers_default_address_id int
customers_telephone varchar(255)
customers_fax varchar(255)
customers_password varchar(60)
customers_newsletter char(1)

newsletters
newsletters_id int [FK]
title varchar(255)
content text
module varchar(255)
date_added datetime
date_sent datetime
status int
locked int

orders_total
orders_total_id int [FK]
orders_id int
title varchar(255)
text varchar(255)
value decimal
class varchar(32)
sort_order int

products_options
products_options_id int [FK]
language_id int [FK]
products_options_name varchar(32)

sessions
sesskey varchar(32) [FK]
expiry int
value text

zones_to_geo_zones
association_id int [FK]
zone_country_id int
zone_id int
geo_zone_id int
last_modified datetime
date_added datetime

address_book
address_book_id int [FK]
customers_id int
entry_gender char(1)
entry_company varchar(255)
entry_firstname varchar(255)
entry_lastname varchar(255)
entry_street_address varchar(255)
entry_suburb varchar(255)
entry_postcode varchar(255)
entry_city varchar(255)
entry_state varchar(255)
entry_country_id int
entry_zone_id int

configuration
configuration_id int [FK]
configuration_title varchar(255)
configuration_key varchar(255)
configuration_value text
configuration_description varchar(255)
configuration_group_id int
sort_order int
last_modified datetime
date_added datetime
use_function varchar(255)
set_function varchar(255)

customers_basket
customers_basket_id int [FK]
customers_id int
products_id tinyint
customers_basket_quantity int
final_price decimal
customers_basket_date_added char(8)

orders
orders_id int [FK]
customers_id int
customers_name varchar(255)
customers_company varchar(255)
customers_street_address varchar(255)
customers_suburb varchar(255)
customers_city varchar(255)
customers_postcode varchar(255)
customers_state varchar(255)
customers_country varchar(255)
customers_telephone varchar(255)
customers_email_address varchar(255)
customers_address_format_id int
delivery_name varchar(255)
delivery_company varchar(255)
delivery_street_address varchar(255)
delivery_suburb varchar(255)
delivery_city varchar(255)
delivery_postcode varchar(255)
delivery_state varchar(255)
delivery_country varchar(255)
delivery_address_format_id int
billing_name varchar(255)
billing_company varchar(255)
billing_street_address varchar(255)
billing_suburb varchar(255)
billing_city varchar(255)
billing_postcode varchar(255)
billing_state varchar(255)
billing_country varchar(255)
billing_address_format_id int
payment_method varchar(255)
cc_type varchar(20)
cc_owner varchar(255)
cc_number varchar(32)
cc_expires varchar(4)
last_modified datetime
date_purchased datetime
orders_status int
orders_date_finished datetime
currency char(3)
currency_value decimal

products
products_id int [FK]
products_quantity int
products_model varchar(12)
products_image varchar(64)
products_price decimal
products_date_added datetime
products_last_modified datetime
products_date_available datetime
products_weight decimal
products_status tinyint
products_tax_class_id int
manufacturers_id int
products_ordered int

products_options_values
products_options_values_id int [FK]
language_id int [FK]
products_options_values_name varchar(64)

specials
specials_id int [FK]
products_id int
specials_new_products_price decimal
specials_date_added datetime
specials_last_modified datetime
expires_date datetime
date_status_change datetime
status int

address_format
address_format_id int [FK]
address_format varchar(128)
address_summary varchar(48)

configuration_group
configuration_group_id int [FK]
configuration_group_title varchar(64)
configuration_group_description varchar(255)
sort_order int
visible int

customers_basket_attributes
customers_basket_attributes_id int [FK]
customers_id int
products_id tinyint
products_options_id int
products_options_value_id int

products_attributes
products_attributes_id int [FK]
products_id int
options_id int
options_values_id int
options_values_price decimal
price_prefix char(1)

products_attributes_download
products_attributes_id int [FK]
products_id int
products_attributes_filename varchar(255)
products_attributes_maxcount int

reviews
reviews_id int [FK]
products_id int
customers_id int
customers_name varchar(255)
reviews_rating int
date_added datetime
last_modified datetime
reviews_status tinyint
reviews_read int

tax_class
tax_class_id int [FK]
tax_class_title varchar(32)
tax_class_description varchar(255)
last_modified datetime
date_added datetime

administrators
id int [FK]
user_name varchar(255)
user_password varchar(60)

counter
startdate char(8)
counter int

customers_info
customers_info_id int [FK]
customers_info_date_of_last_login datetime
customers_info_number_of_logins int
customers_info_date_account_created datetime
customers_info_date_account_last_modified datetime
global_product_notifications int

products_attributes_download
products_attributes_id int [FK]
products_id int
products_attributes_filename varchar(255)
products_attributes_maxcount int

products_description
products_id int [FK]
language_id int [FK]
products_name varchar(64)
products_description text
products_url varchar(255)
products_viewed int

reviews_description
reviews_id int [FK]
languages_id int [FK]
reviews_text text

tax_rates
tax_rates_id int [FK]
tax_zone_id int
tax_class_id int
tax_priority int
tax_rate decimal
tax_description varchar(255)
last_modified datetime
date_added datetime

banners
banners_id int [FK]
banners_title varchar(64)
banners_url varchar(255)
banners_image varchar(64)
banners_group varchar(10)
banners_html_text text
expires_impressions int
expires_date datetime
date_scheduled datetime
date_added datetime
date_status_change datetime
status int

countries
countries_id int [FK]
countries_name varchar(255)
countries_iso_code_2 char(2)
countries_iso_code_3 char(3)
address_format_id int

languages
languages_id int [FK]
name varchar(32)
code char(2)
image varchar(64)
directory varchar(32)
sort_order int

products_description
products_id int [FK]
language_id int [FK]
products_name varchar(64)
products_description text
products_url varchar(255)
products_viewed int

products_images
id int [FK]
products_id int
image varchar(64)
hitcontent text
sort_order int

sec_directory_whitelist
id int [FK]
directory varchar(255)

geo_zones
geo_zone_id int [FK]
geo_zone_name varchar(32)
geo_zone_description varchar(255)
last_modified datetime
date_added datetime

banners_history
banners_history_id int [FK]
banners_id int
banners_shown int
banners_clicked int
banners_history_date datetime

currencies
currencies_id int [FK]
title varchar(32)
code char(3)
symbol_left varchar(12)
symbol_right varchar(12)
decimal_point char(1)
thousands_point char(1)
decimal_places char(1)
value float
last_updated datetime

manufacturers
manufacturers_id int [FK]
manufacturers_name varchar(32)
manufacturers_image varchar(64)
date_added datetime
last_modified datetime

products_images
id int [FK]
products_id int
image varchar(64)
hitcontent text
sort_order int

products_notifications
products_id int [FK]
customers_id int [FK]
date_added datetime

whos_online
customer_id int
full_name varchar(255)
session_id varchar(128)
ip_address varchar(15)
time_entry varchar(14)
time_last_click varchar(14)
last_page_url text

zones
zone_id int [FK]
zone_country_id int
zone_code varchar(32)
zone_name varchar(255)

categories
categories_id int [FK]
categories_image varchar(64)
parent_id int
sort_order int
date_added datetime
last_modified datetime

counter_history
counter_id int [FK]
month char(8)
counter int

manufacturers_info
manufacturers_id int [FK]
languages_id int [FK]
manufacturers_url varchar(255)
url_clicked int
date_last_click datetime

orders_products
orders_products_id int [FK]
orders_id int
products_id int
products_model varchar(12)
products_name varchar(64)
products_price decimal
final_price decimal
products_tax decimal
products_quantity int

orders_products_attributes
orders_products_attributes_id int [FK]
orders_id int
orders_products_id int
products_options varchar(32)
products_options_values varchar(32)
options_values_price decimal
price_prefix char(1)

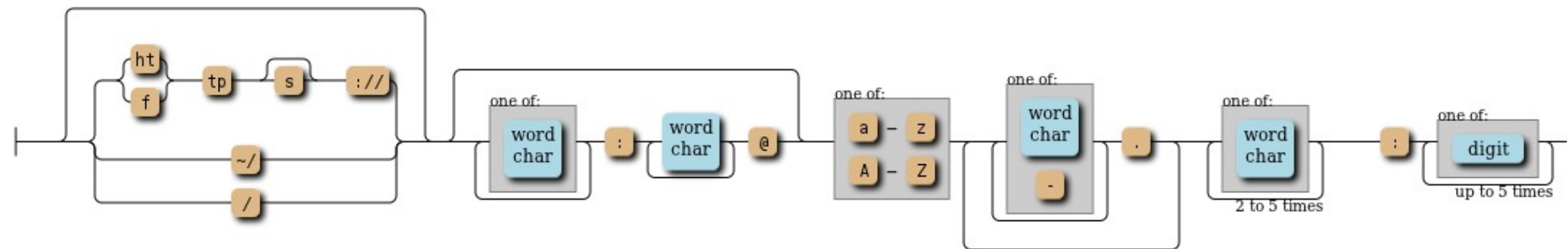
orders_status
orders_status_id int [FK]
language_id int [FK]
orders_status_name varchar(32)
public_flag int
downloads_flag int

orders_status_history
orders_status_history_id int [FK]
orders_id int
orders_status_id int
date_added datetime
customer_notified int
comments text

Visualisation of regular expressions

<http://www.strfriend.com/>

```
^((ht|f)tp(s?)\:\W|~/|/)?([\w]+:\w+@)?([a-zA-Z]{1}([\w\.-]+\.)+([\w]{2,5}))(:[\d]{1,5})
```



Finding help

- man perlrun
 - Perl runtime options
- man perlvar
 - Cryptic and magical variables explained
 - Along with “use English '-no_match_vars';”
 - And now they're not cryptic or magical!
- perldoc -f \$function
- irc.freenode.com #perl

You still want a damn pony?!

sigh

Oh okay, you can haz poni!!1one!



Questions?

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Northwest England Perl Mongers

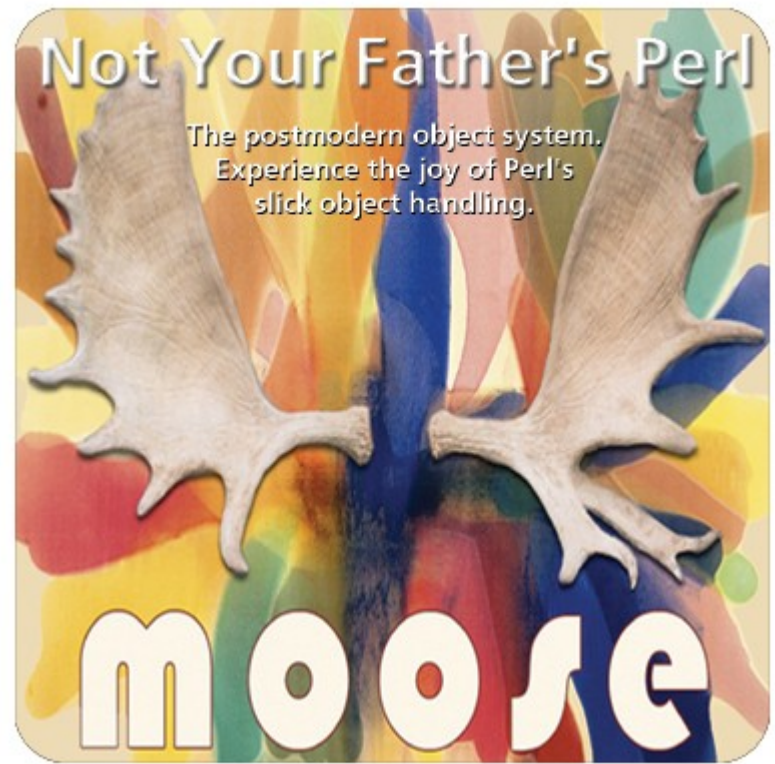
<http://northwestengland.pm.org/>

ids on irc.perl.org

ids on irc.freenode.net

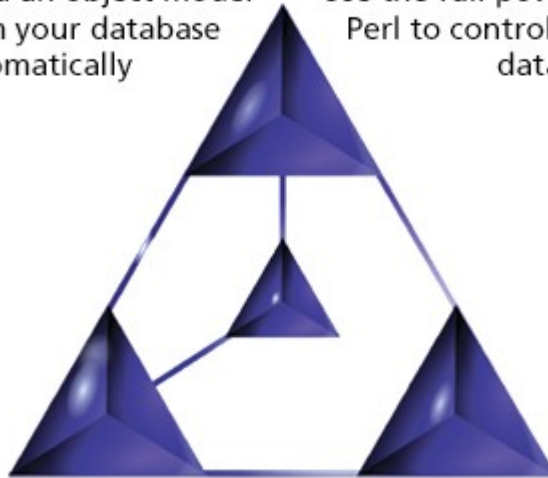
These slides are at:

<http://agaton.scsys.co.uk/~iann/dev/flossuk-2011/>



Build an object model
from your database
automatically

Use the full power of
Perl to control your
database



DBIx::Class